Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application.

Listing of Claims:

1. (Currently Amended) A method of oligomerizing olefin, comprising:

removing oxygenated hydrocarbon from an olefin stream containing at least one C_2 to C_{12} olefin to obtain an olefin feed stream comprising less than 1,000 ppm by weight oxygenated hydrocarbon; and

contacting the olefin feed with an acid based oligomerization catalyst to oligomerize the olefin in the olefin feed, wherein the olefin feed stream is hydrated prior to contacting with the oligomerization catalyst.

2. (Original) The method of claim 1, wherein the acid based oligomerization catalyst is a solid phosphoric acid catalyst.

3. (Original) The method of claim 1, wherein the acid based oligomerization catalyst is a zeolite oligomerization catalyst.

4. (Original) The method of claim 3, wherein the zeolite oligomerization catalyst is selected from the group consisting of TON, MTT, MFI, MEL, MTW, EUO, ZSM-57, ferrierites, offretites, ZSM-4, ZSM-18, ZSM-23, Zeolite Beta, faujasites, zeolite L, mordenites, erionites and chabazites.

5. (Original) The method of claim 4, wherein the zeolite oligomerization catalyst is ZSM-22, ZSM-23 or ZSM-57.

6. (Original) The method of claim 5, wherein the zeolite oligomerization catalyst is ZSM-22 or ZSM-23.

7. (Original) The method in claim 6, wherein the zeolite oligomerization catalyst is a selectivated catalyst.

8. (Original) The method of claim 1, wherein the olefin feed contains less than 50 wt % alkane.

9. (Original) The method of claim 8, wherein the olefin feed contains at least 50 wt % olefin.

10. (Original) The method of claim 1, wherein the olefin stream is obtained by contacting oxygenate with a molecular sieve catalyst.

11. (Original) The method of claim 10, wherein the oxygenate is methanol or dimethyl ether.

12. (Canceled)

13. (Currently Amended) The method of claim [[12]]1, wherein the hydrated olefin feed has a water content of 0.05 to 2 weight percent.

14. (Original) The method of claim 1, wherein the olefin feed stream comprises greater than 5 ppm by weight oxygenated hydrocarbon.

15-53. (Canceled)

54. (Currently Amended) A method of oligomerizing olefin, comprising:
providing an olefin feed stream comprising at least one C_2 to C_{12} olefin and oxygenated hydrocarbon, wherein the oxygenated hydrocarbon is provided in the olefin stream at a concentration of greater than 5 ppm by weight and less than 1,000 ppm by weight; and
contacting the olefin feed with an acid based oligomerization catalyst to oligomerize the olefin in the olefin feed, wherein the olefin feed stream is hydrated prior to contacting with the oligomerization catalyst.

55. (Original) The method of claim 54, wherein the acid based oligomerization catalyst is solid phosphoric acid catalyst.

56. (Original) The method of claim 54, wherein the acid based oligomerization catalyst is a zeolite oligomerization catalyst.

57. (Original) The method of claim 56, wherein the zeolite oligomerization catalyst is selected from the group consisting of TON, MTT, MFI, MEL, MTW, EUO, ZSM-57, ferrierites, offretites, ZSM-4, ZSM-18, ZSM-23, Zeolite Beta, faujasites, zeolite L, mordenites, erionites and chabazites.

58. (Original) The method of claim 57, wherein the zeolite oligomerization catalyst is ZSM-22, ZSM-23 or ZSM-57.

59. (Original) The method of claim 58, wherein the zeolite oligomerization catalyst is ZSM-22 or ZSM-23.

60. (Original) The method of claim 59, wherein the zeolite oligomerization catalyst is a selectivated catalyst.

61. (Original) The method of claim 54, wherein the olefin feed contains less than 50 wt % alkane.

62. (Original) The method of claim 61, wherein the olefin feed contains at least 50 wt % olefin.

63. (Original) The method of claim 54, wherein the olefin stream is obtained by contacting oxygenate with a molecular sieve catalyst.

64. (Original) The method of claim 63, wherein the oxygenate is methanol or dimethyl ether.

65. (Canceled)

66. (Currently Amended) The method of claim [[65]]54, wherein the hydrated olefin feed has a water content of 0.05 to 2 weight percent.